IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

1. (Currently Amended) A ~~titanium oxide complex~~ polymer-based material chemically bonded to titanium oxide, comprising:

~~a~~ the polymer-based material having an active group; and the titanium oxide having ~~a reactive functional group~~ an amino group which is capable of reacting with the active group, wherein the active group and the ~~reactive functional group~~ amino group are bonded directly to each other based on ~~a chemical bond~~ an amido bond~~, and the reactive functional group is an amino group, and the chemical bond is an amido bond~~ and wherein said titanium oxide is chemically bonded to said polymer-based material.

Claim 2 (Canceled)

3. (Currently Amended) The ~~titanium oxide complex~~ polymer-based material chemically bonded to titanium oxide as set forth in claim 1, wherein the polymer-based material is silicone rubber.

4. (Currently Amended) The ~~titanium oxide complex~~ polymer-based material chemically bonded to titanium oxide as set forth in claim 1, wherein the titanium oxide having the reactive functional group which is capable of reacting with the active group has a photocatalyst property.

5. (Currently Amended) A medical material, comprising the ~~titanium oxide complex~~ polymer-based material chemically bonded to titanium oxide as set forth in claim 1.

6. (Currently Amended) A titanium oxide ~~complex~~ bonded to a polymer based material, comprising: a hydroxyl group contained in the titanium oxide; and ~~a~~ the polymer-based material having ~~a functional group~~ an alkoxysilyl group which is capable of chemically bonding to the hydroxyl group, wherein the hydroxyl group and the polymer-based

material are bonded directly to each other based on a chemical bond ~~, and the functional group is an alkoxysilyl group~~ and wherein said titanium oxide is chemically bonded to said polymer-based material.

Claim 7 (Canceled)

8. (Currently Amended) The titanium oxide ~~complex~~ bonded to a polymer based material as set forth in claim 6, wherein the polymer-based material is silkfibroin.

9. (Currently Amended) A medical material, comprising the titanium oxide ~~complex~~ bonded to a polymer based material as set forth in claim 6.

10. (Withdrawn/Currently Amended) A method of producing a titanium oxide ~~complex~~ bonded to a polymer based material, comprising:

an active group introduction step of introducing an active group into ~~a~~ the polymer-based material;

a reactive functional group introduction step of introducing a reactive functional group, which is capable of reacting with the active group, into the titanium oxide; and

a reaction step of reacting the active group with the reactive functional group.

11. (Withdrawn) The method as set forth in claim 10, wherein a silane coupling agent having the reactive functional group is used in the reactive functional group introduction step.

12. (Withdrawn/Currently Amended) The ~~titanium oxide complex~~ method as set forth in claim 10, wherein the active group is a carboxyl group, and the reactive functional group is an amino group.

13. (Withdrawn) The method as set forth in claim 10, wherein the polymer-based material is a medical polymer material.

14. (Withdrawn/Currently Amended) A method of producing a titanium oxide ~~complex~~ bonded to a polymer-based material, comprising:

an introduction step of introducing a functional group, which is capable of chemically bonding to a hydroxyl group contained in the titanium oxide, into ~~a~~ the polymer-based material; and

a functional group reaction step of reacting the functional group of the polymer-based material with the hydroxyl group contained in the titanium oxide.

15. (Withdrawn) The method as set forth in claim 14, wherein the functional group is at least one kind selected from a group of an alcoxysilyl group and an isocyanate group.

16. (Withdrawn) The method as set forth in claim 14, wherein a silane coupling agent having the functional group is used in the introduction step.

17. (Withdrawn) The method as set forth in claim 14, wherein the polymer-based material is a medical polymer material.